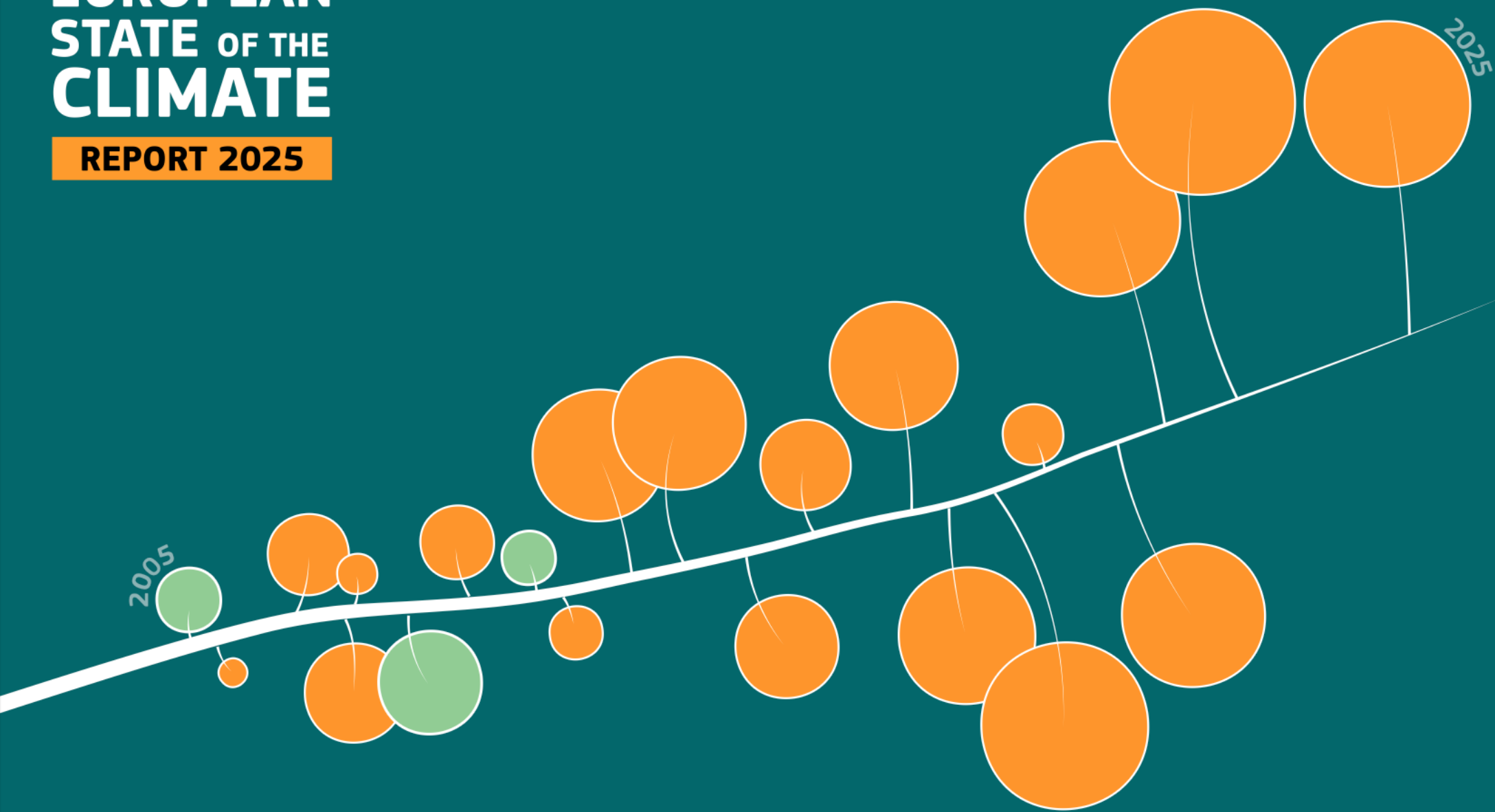


# REPORT 2025



# EUROPEAN STATE OF THE CLIMATE

REPORT 2025



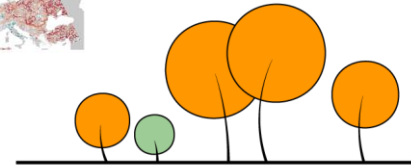
PROGRAMME OF  
THE EUROPEAN UNION



IMPLEMENTED BY



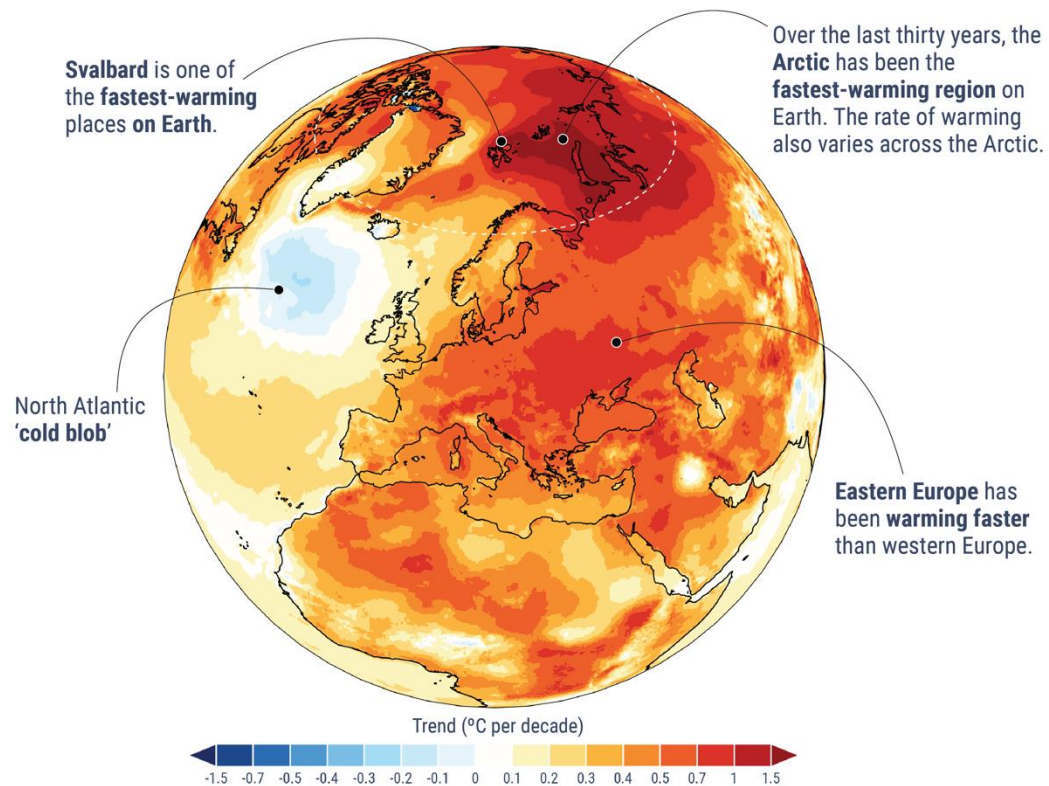
WORLD  
METEOROLOGICAL  
ORGANIZATION





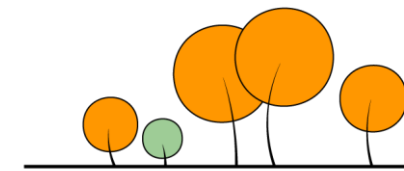
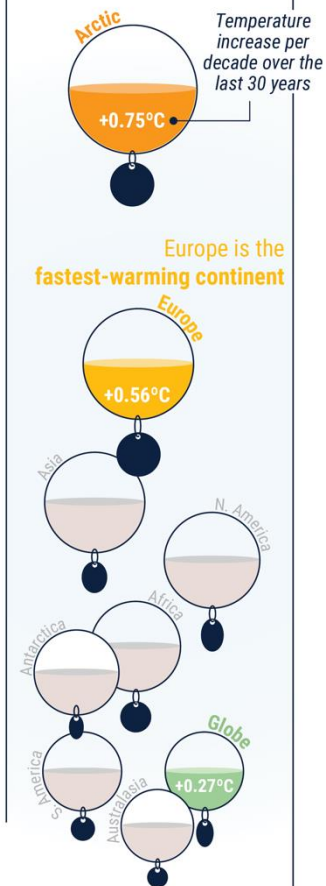
## The rate of warming varies across Europe

Linear trend in annual surface air temperature for 1996–2025



Data: ERA5 • Credit: C3S/ECMWF

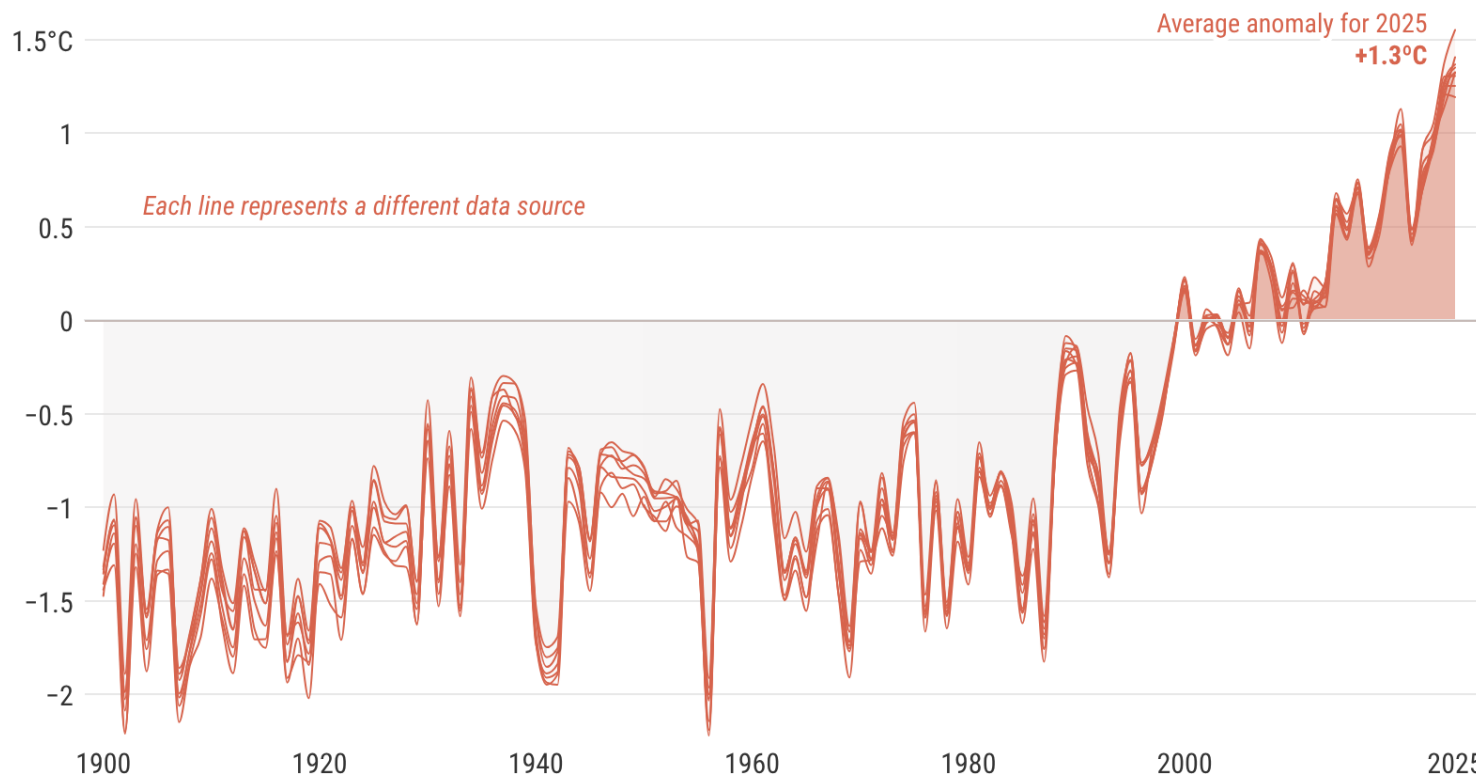
The fastest-warming region on Earth is the Arctic



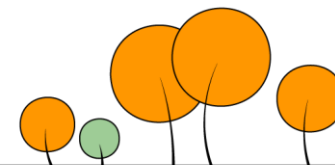
# 2025 was one of Europe's warmest years on record

2025 was the **warmest year on record** for WMO RA VI (Europe). For the **C3S European domain**, 2025 ranked as the **third-warmest year in the ERA5 dataset**, and the **second-warmest year in the E-OBS dataset**.

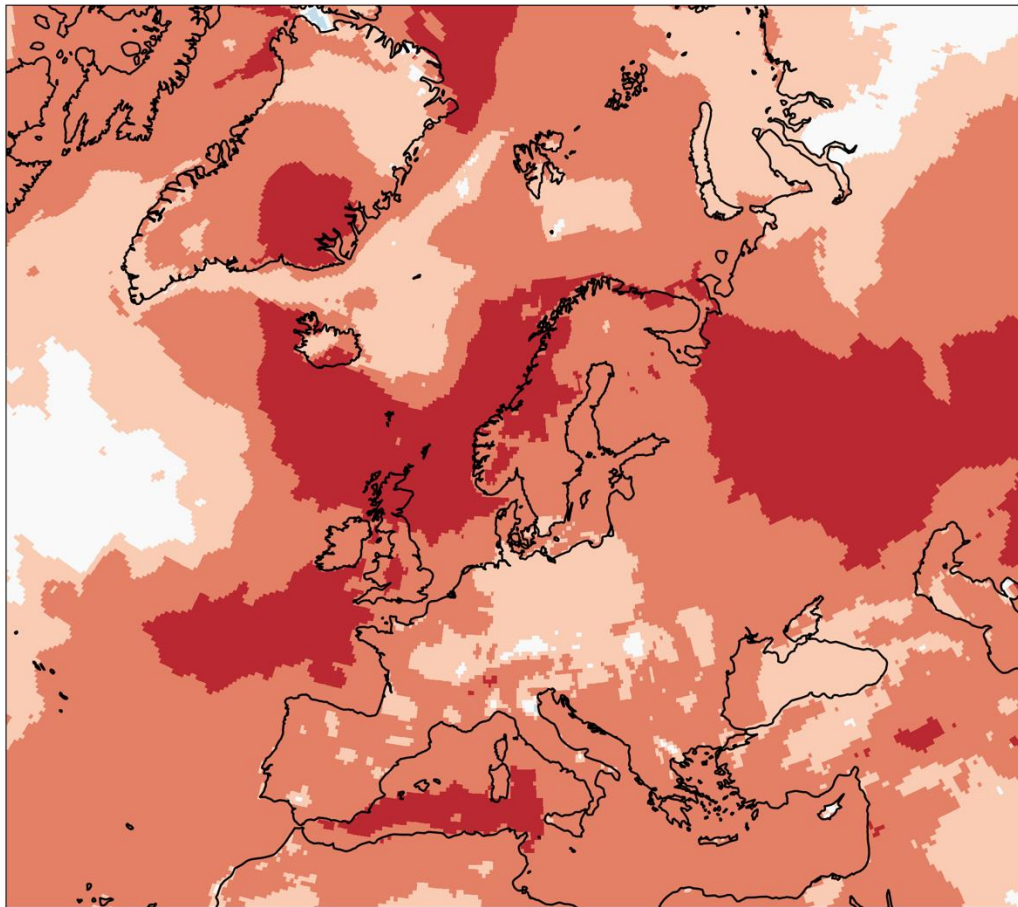
Anomalies in annual surface air temperature according to several international sources • WMO RA VI (Europe)



Data: HadCRUT5 (1900–2025), NOAA GlobalTemp v6 (1900–2025), GISTEMP (1900–2025), Berkeley Earth (1900–2025), JRA-3Q (1979–2025), ERA5 (1950–2025), CMST (1900–2025), CMA-GMST (1900–2025), DCENT-I (1900–2025) • Reference period: 1991–2020  
• Credit: WMO/C3S/ECMWF



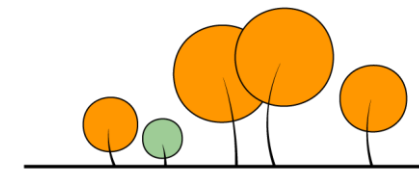
At least **95%**  
of Europe saw **above-average** annual temperatures in 2025.



Data: ERA5 (1979–2025) • Reference period: 1991–2020 • Credit: C3S/ECMWF

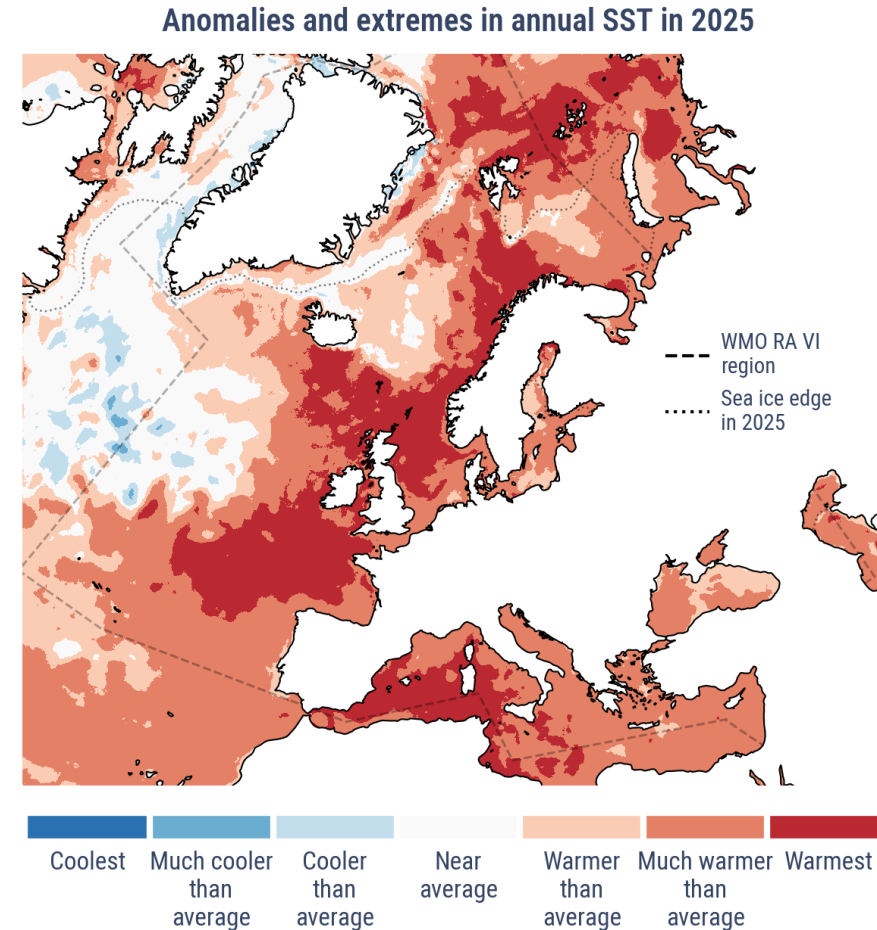
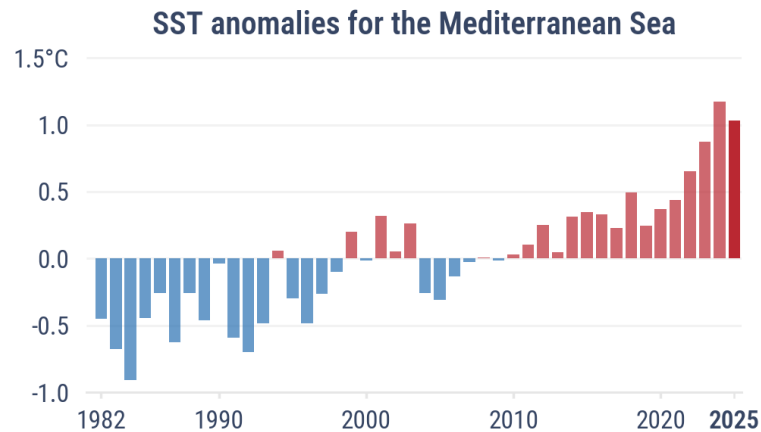
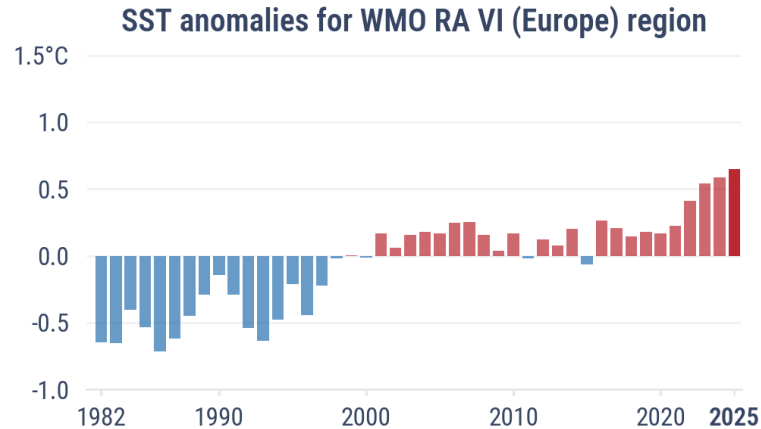
Anomalies and extremes in annual surface air temperature in 2025

Several northern European countries saw the **warmest** (United Kingdom, Norway and Iceland) or **second warmest** (Ireland, Sweden and Finland) year on record.

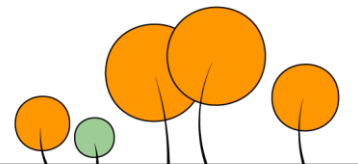


# Record-high sea surface temperatures

The annual sea surface temperature for the **European ocean** was the **highest on record**. For the **Mediterranean**, it was the **second-highest**.

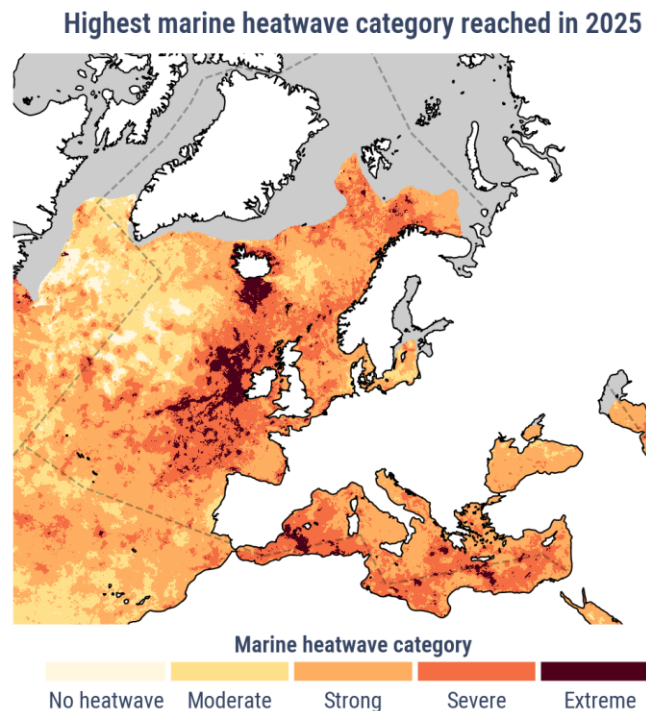
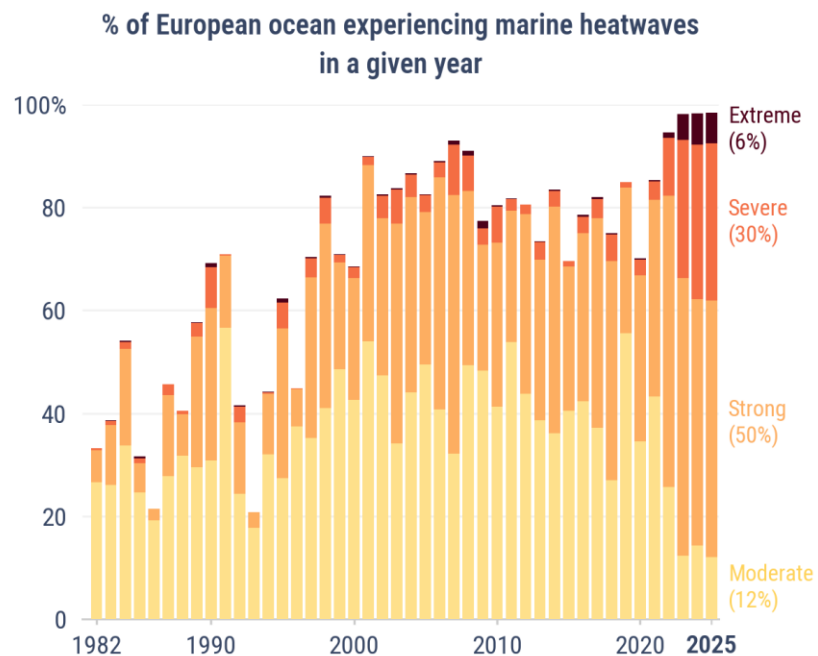


Data: C3S Global Sea and Sea Ice Surface Temperature v1.0 (1982–2025) • Reference period: 1991–2020 • Credit: C3S/ECMWF





## Record 86% of European seas saw at least 'strong' marine heatwaves in 2025



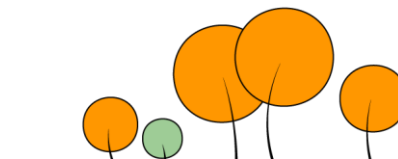
Data: C3S Global Sea and Sea Ice Surface Temperature v1.0 • Reference period: 1991–2020 • Credit: DMI/C3S/ECMWF



PROGRAMME OF  
THE EUROPEAN UNION

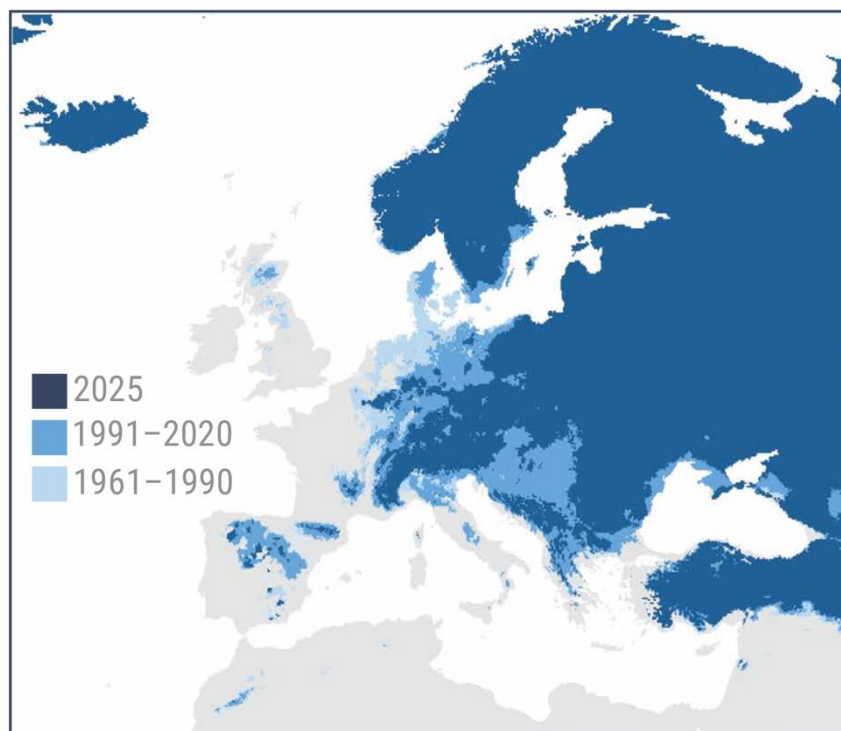


IMPLEMENTED BY



## The area of Europe experiencing days below freezing is shrinking

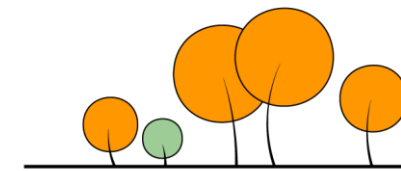
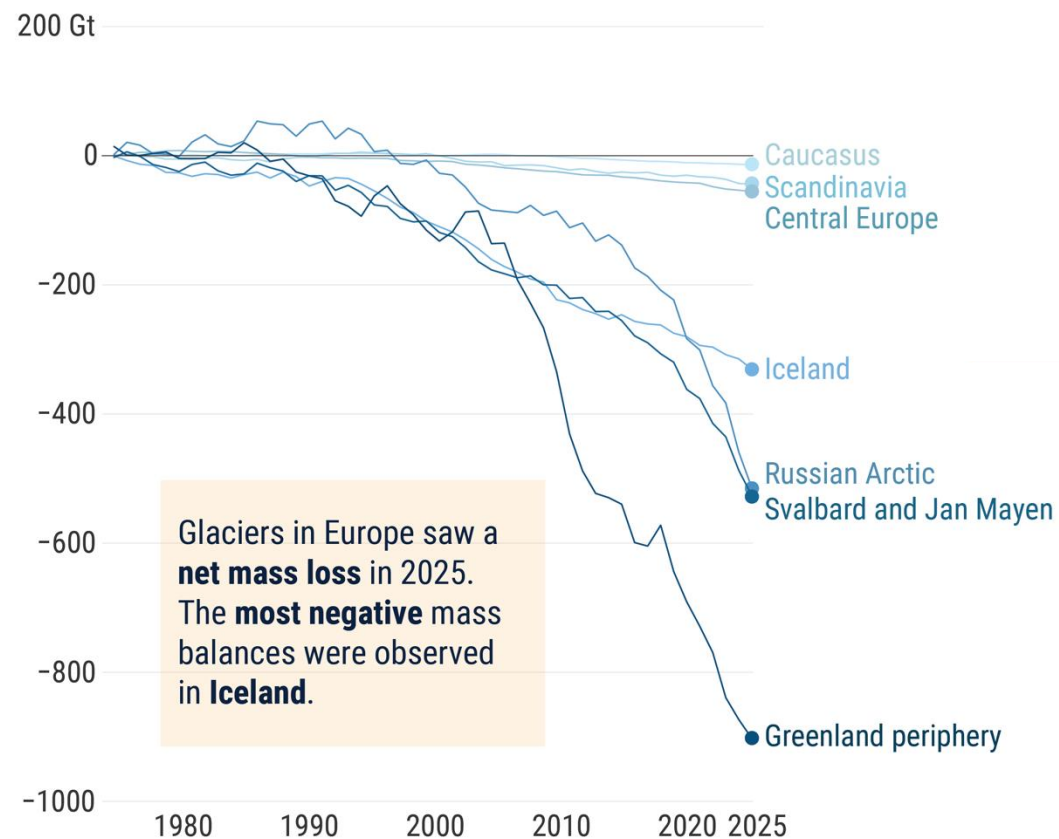
Area with at least 14 consecutive **frost days** during winter



A **frost day** is defined as a day with a minimum temperature of 0°C or lower.

Data: E-OBS • Credit: KNMI/C3S/ECMWF

## Cumulative glacier mass change for European regions



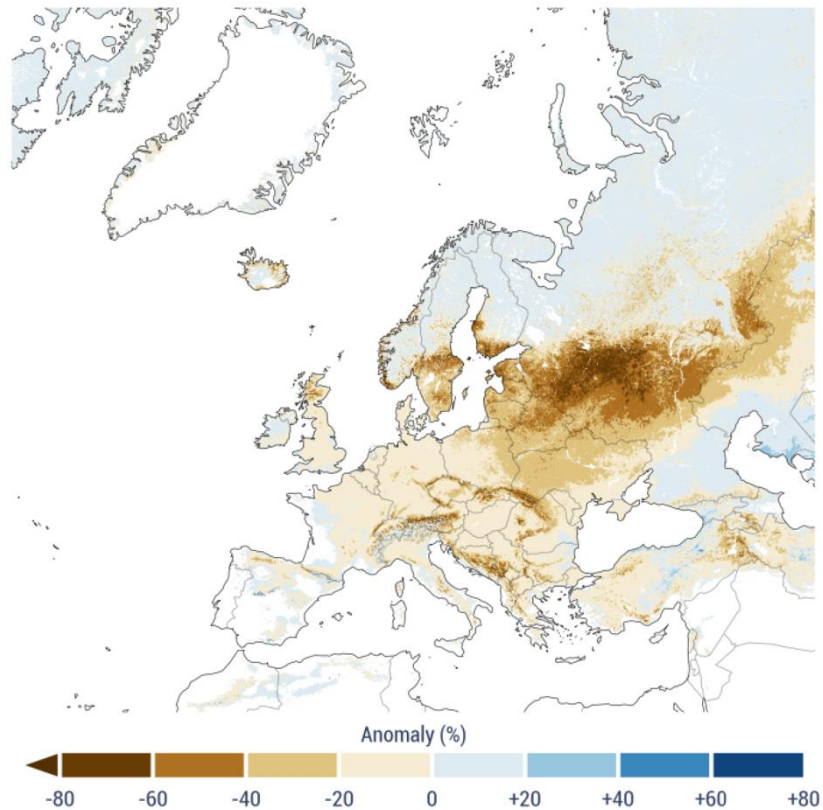


# Cold environments in a warming climate

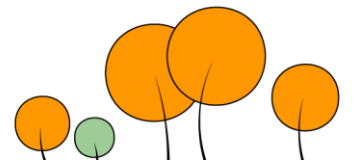
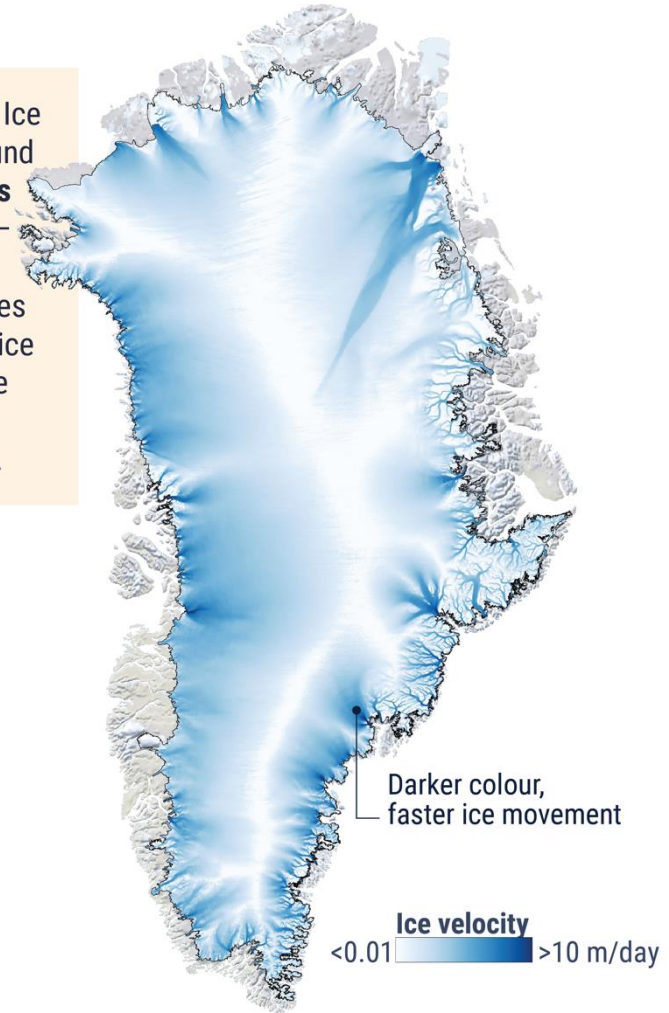
In 2025, end-of-season **snow cover** extent and mass were the **third lowest** on record.



Snow area anomalies March 2025



The Greenland Ice Sheet lost around **139 gigatonnes of ice** in 2025 – equivalent to around 1.5 times the amount of ice stored in all the glaciers in the European Alps.



# EUROPEAN STATE OF THE CLIMATE

REPORT 2025

## Key events in 2025

Heatwaves impacted Europe from the Mediterranean to the Arctic Circle.

Extreme precipitation and **flooding were less widespread** than in recent years.

Weather and climate events can impact **biodiversity**.

At least **21** lives lost due to storms and flooding

At least **14,500** people affected by storms and flooding

At least **500** people affected by wildfires

- Heatwave
- Wildfire
- Drought
- Coldwave/heavy snow
- Heavy rain/flood
- Marine heatwave
- Windstorm

Data according to preliminary estimates for 2025 from the International Disaster Database. Information on impacts of heatwaves in 2025 is not yet available.  
For more information, visit the interactive '[key events map](#)' online.



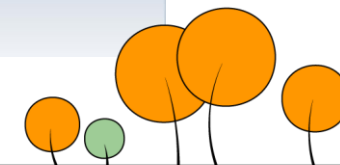
PROGRAMME OF  
THE EUROPEAN UNION



IMPLEMENTED BY

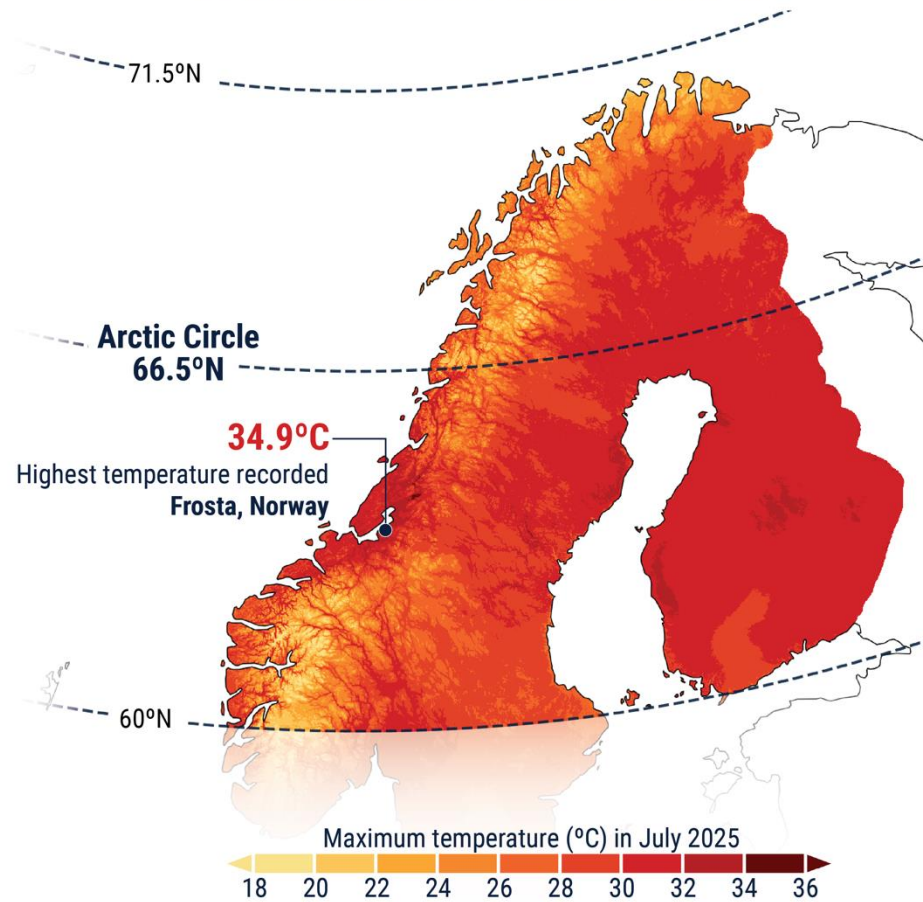


WORLD  
METEOROLOGICAL  
ORGANIZATION

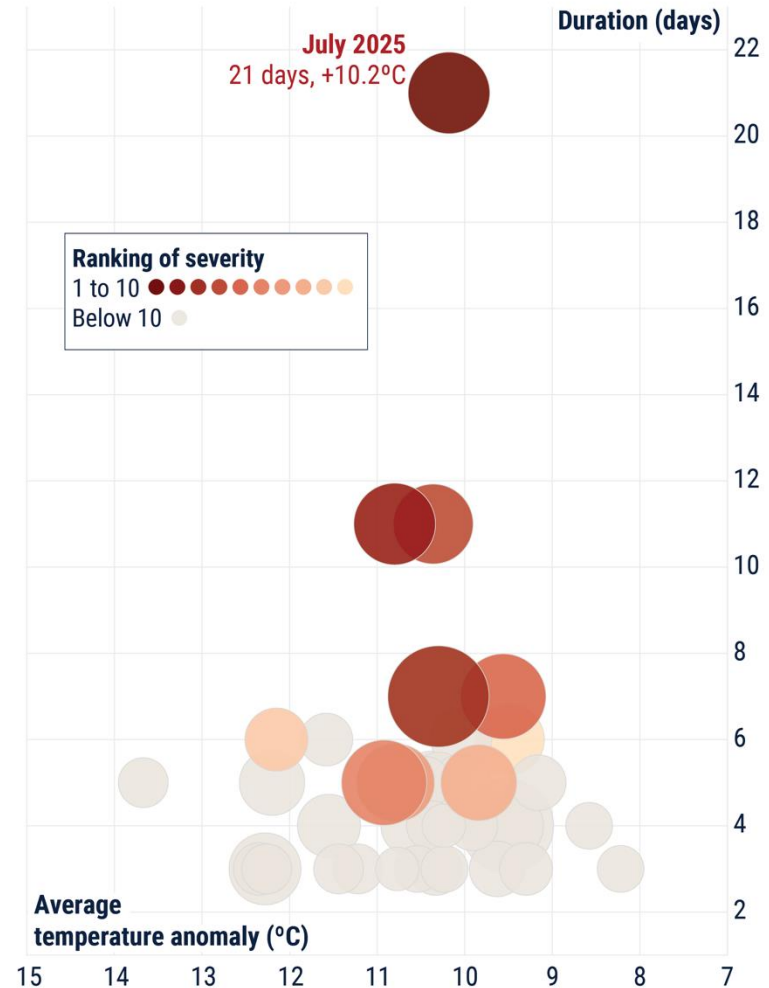


# In July 2025, sub-Arctic Fennoscandia experienced its longest and most severe heatwave on record

*Fennoscandia is the region encompassing Norway, Sweden and Finland.  
Sub-Arctic Fennoscandia refers to the area north of 60°N.*



Data: E-OBS, SYNOP, NGCD • Reference period: 1961–1990 (heatwaves) • Credit: DWD/C3S/ECMWF/Met Norway



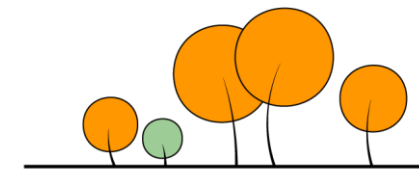
PROGRAMME OF  
THE EUROPEAN UNION



IMPLEMENTED BY



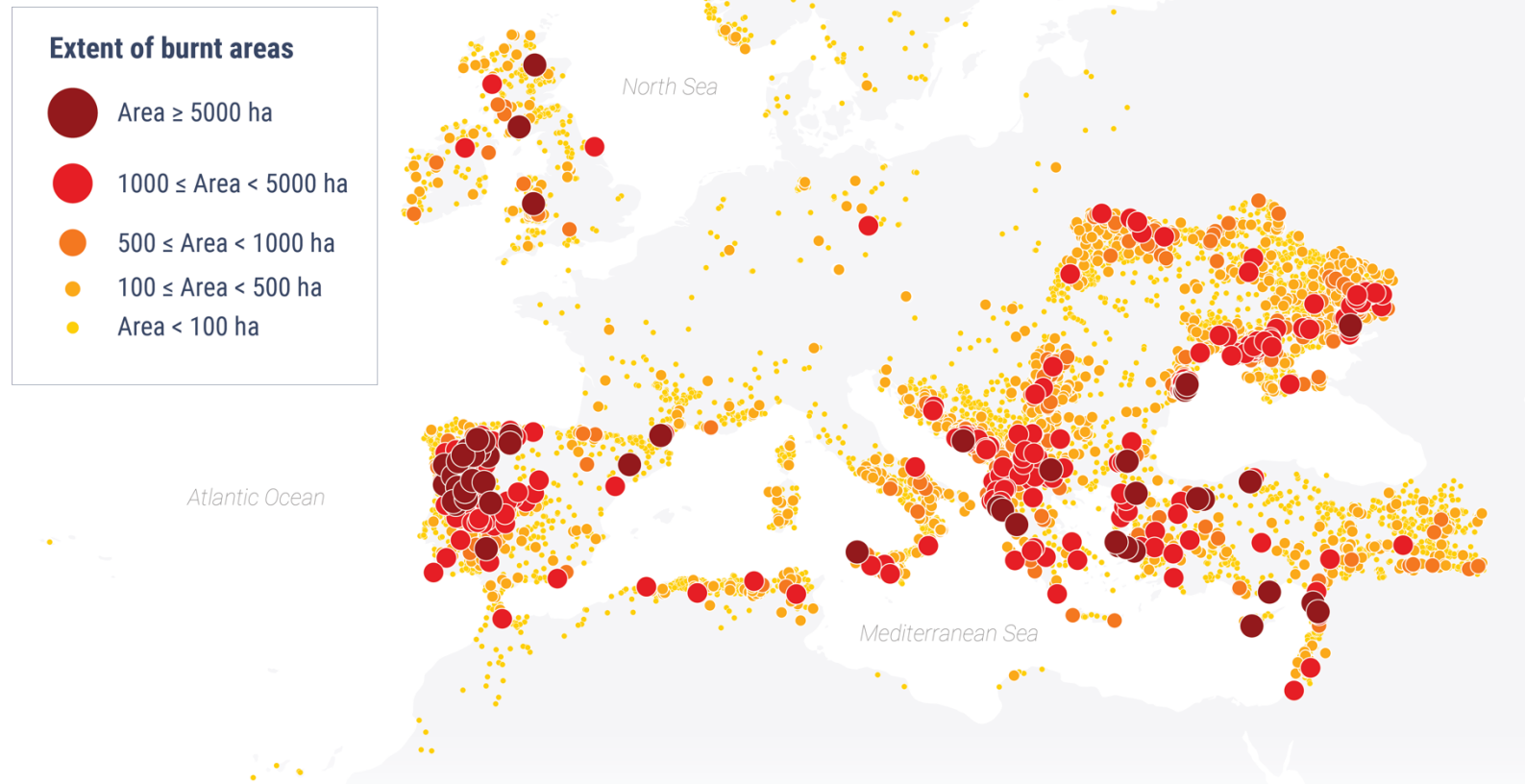
WORLD  
METEOROLOGICAL  
ORGANIZATION





# Burnt areas across Europe and the Mediterranean in 2025

Data: European Forest Fire Information System (EFFIS) • Credit: EFFIS/CEMS/C3S/ECMWF



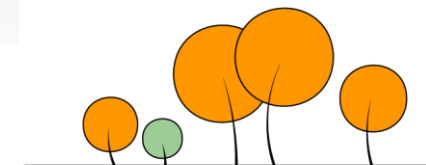
PROGRAMME OF  
THE EUROPEAN UNION



IMPLEMENTED BY



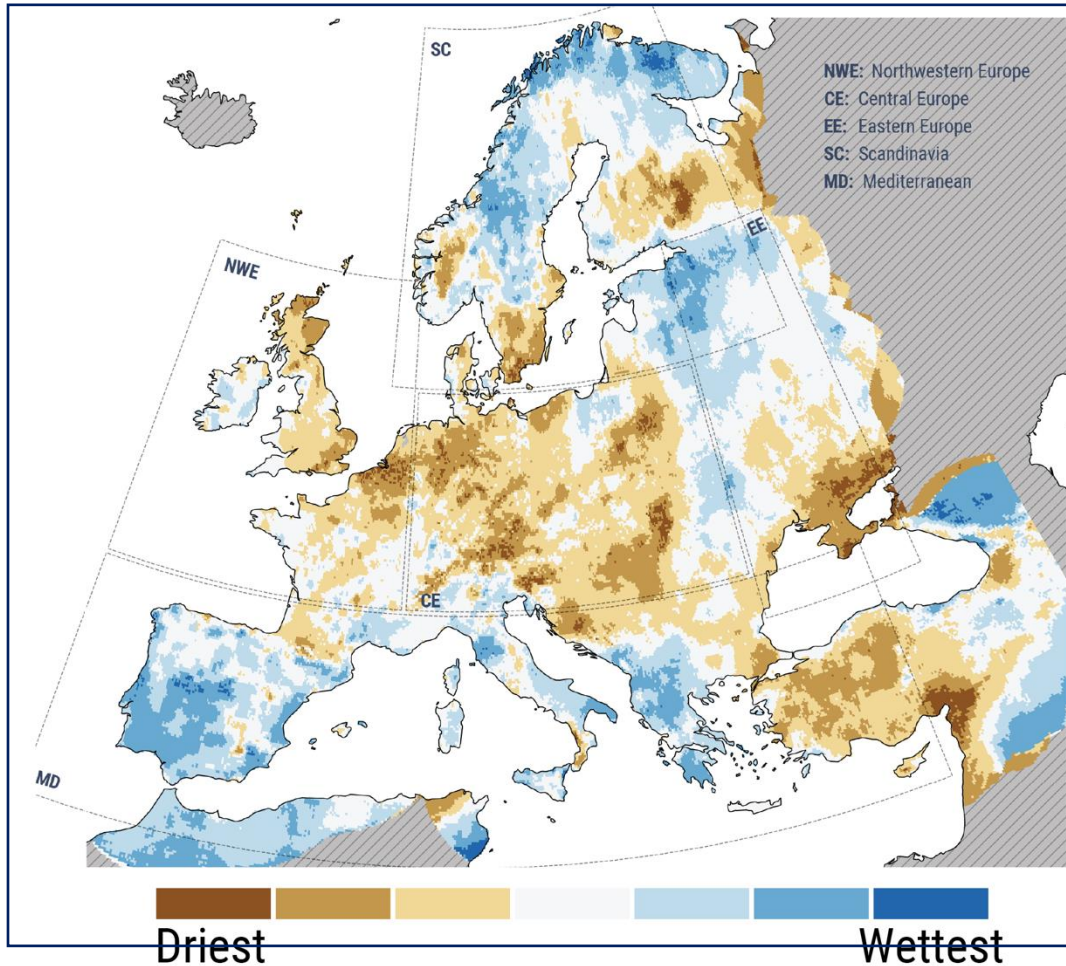
WORLD  
METEOROLOGICAL  
ORGANIZATION



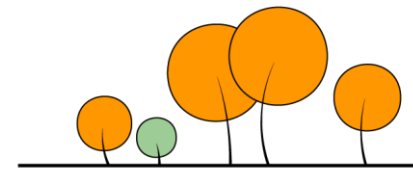
# Hydrological conditions in 2025

Drier than average across most of Europe, but with strong regional contrasts.

## Anomalies and extremes in annual precipitation



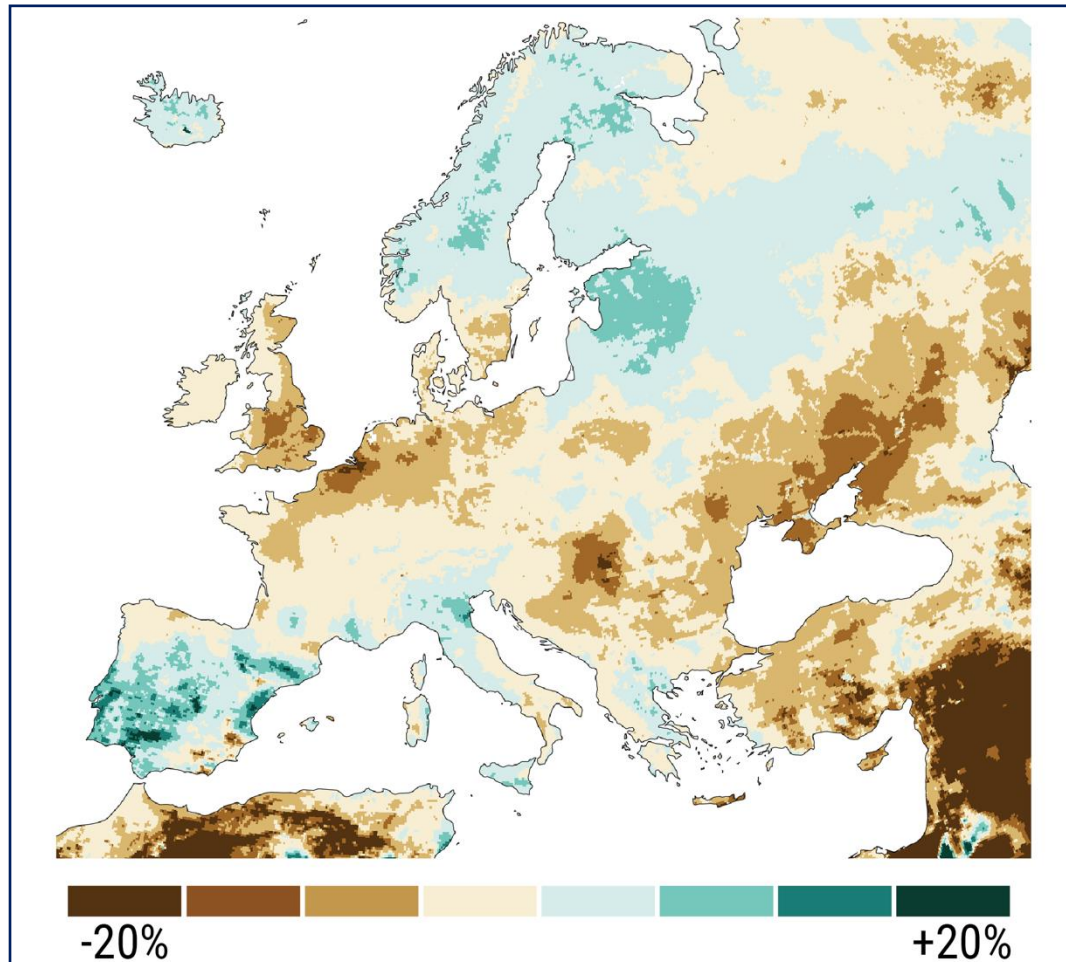
A large area from northwestern to eastern Europe saw **below-average precipitation**.



# Hydrological conditions in 2025

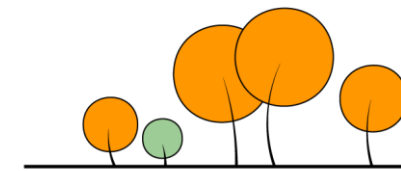
Drier than average across most of Europe, but with strong regional contrasts.

## Anomalies in soil moisture



A large area from northwestern to eastern Europe saw **below-average precipitation**.

It was one of Europe's three **driest years for soil moisture** since 1992.

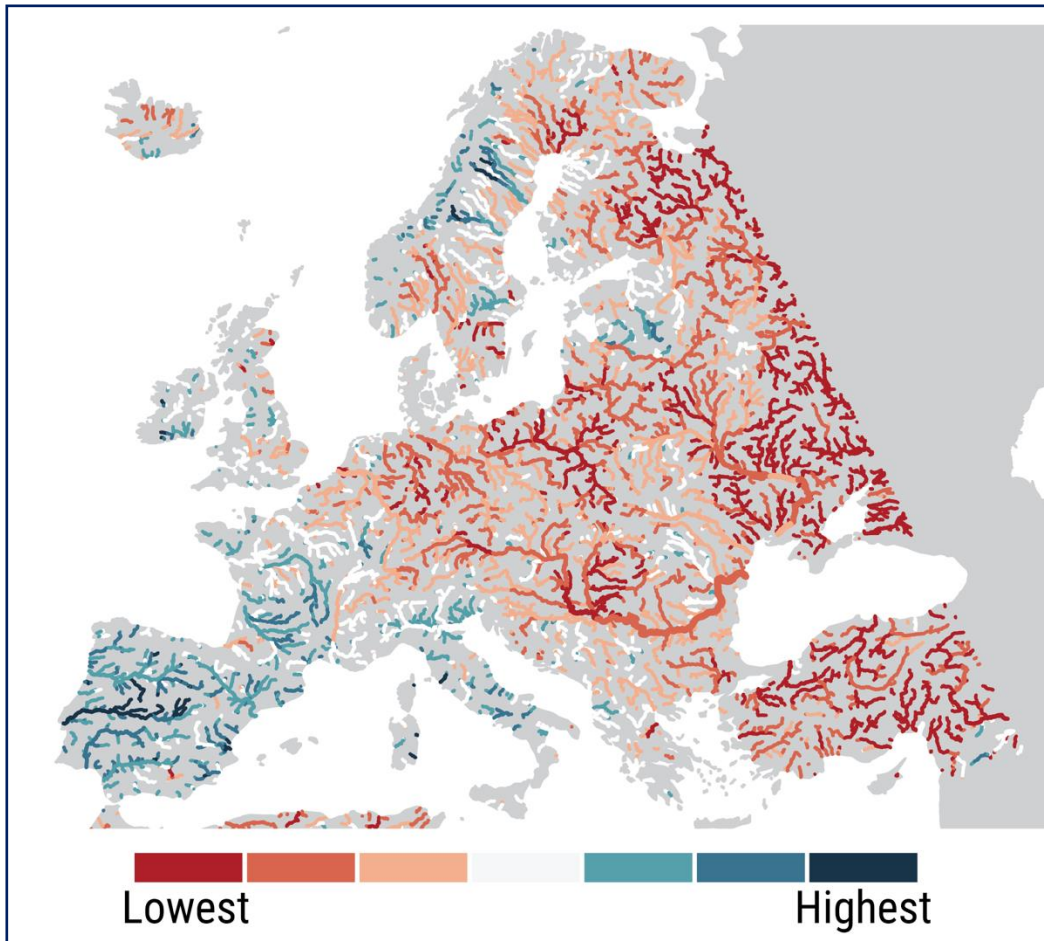




# Hydrological conditions in 2025

Drier than average across most of Europe, but with strong regional contrasts.

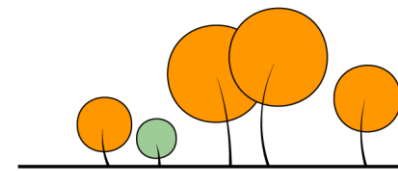
## Anomalies in annual average river flow



A large area from northwestern to eastern Europe saw **below-average precipitation**.

It was one of Europe's three **driest years for soil moisture** since 1992.

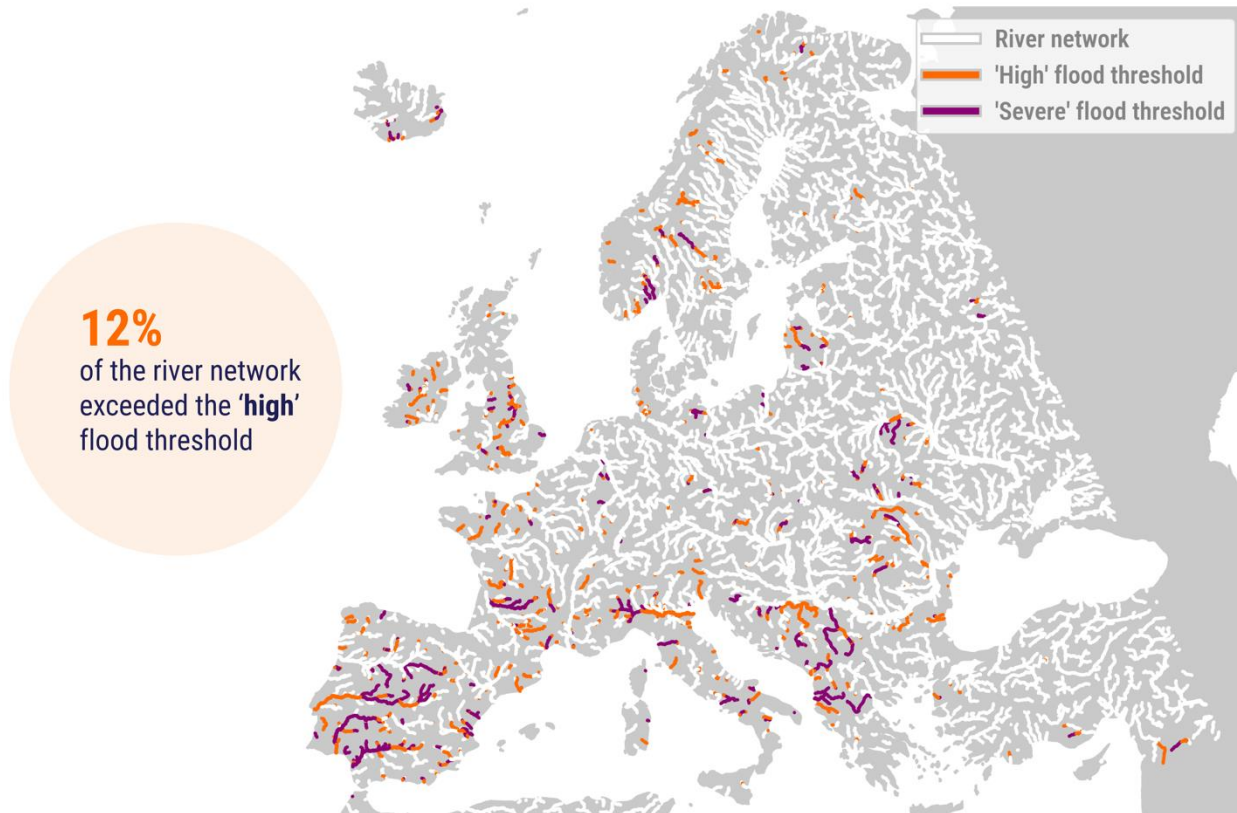
Annual **river flow** was below average in **70%** of rivers.



# Hydrological conditions in 2025

Drier than average across most of Europe, but with strong regional contrasts.

Rivers where the flow exceeded flood thresholds on any day in 2025



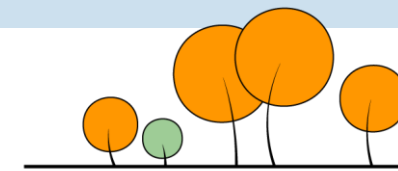
In 2024 30% of the river network exceeded at least the 'high' flood threshold and 12% the 'severe' flood threshold.

A large area from northwestern to eastern Europe saw **below-average precipitation**.

It was one of Europe's three **driest years for soil moisture** since 1992.

Annual **river flow** was below average in **70%** of rivers.

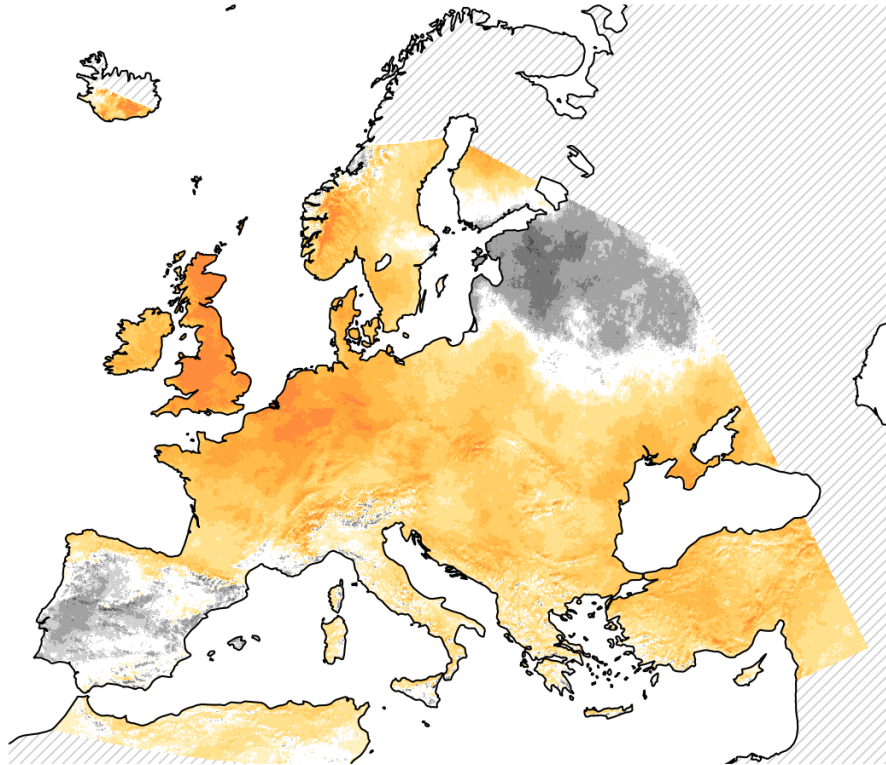
**Extreme precipitation and flooding** were **less widespread** than in recent years.



# Renewables supplied nearly half of Europe's electricity in 2025

With solar power reaching a new contribution record of 12.5%

## Anomalies in annual solar radiation



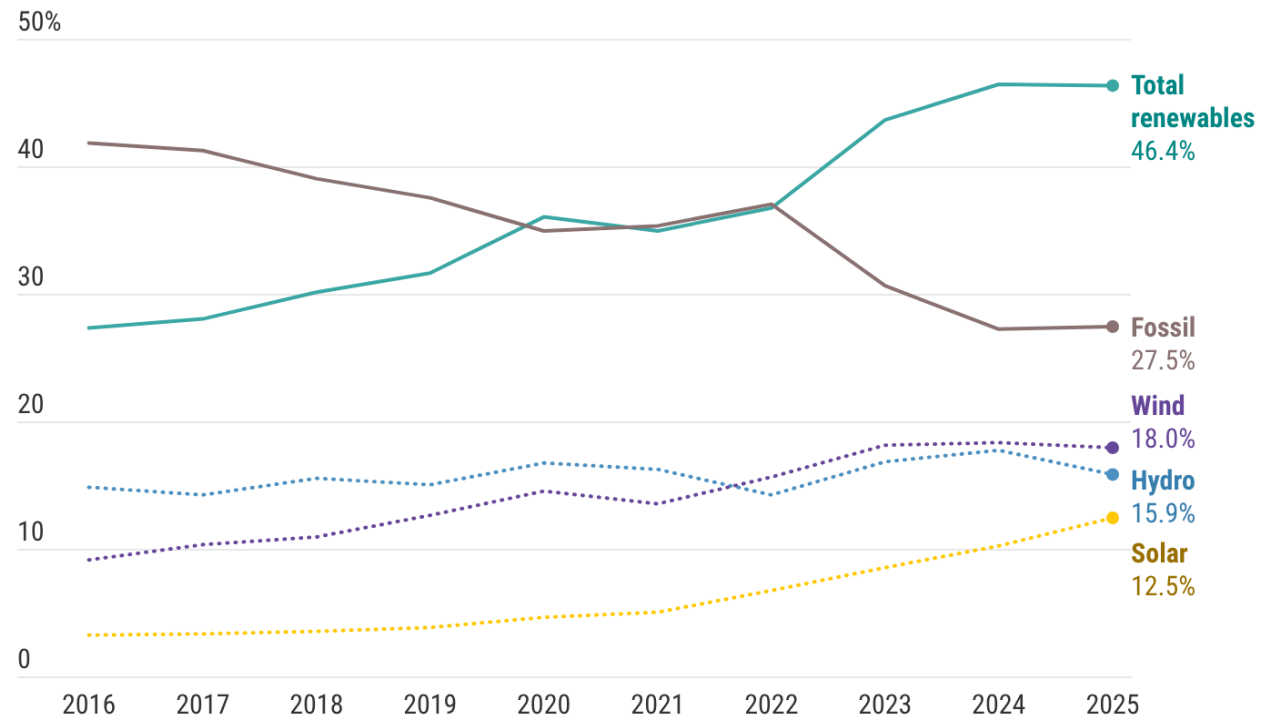
Anomaly (% above/below average)



Data: Solar radiation from CM-SAF SARAH-3

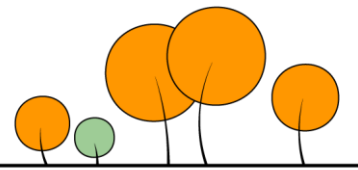
## New record for solar power generation in Europe

Percentage of the total annual actual electricity generation for Europe from different sources



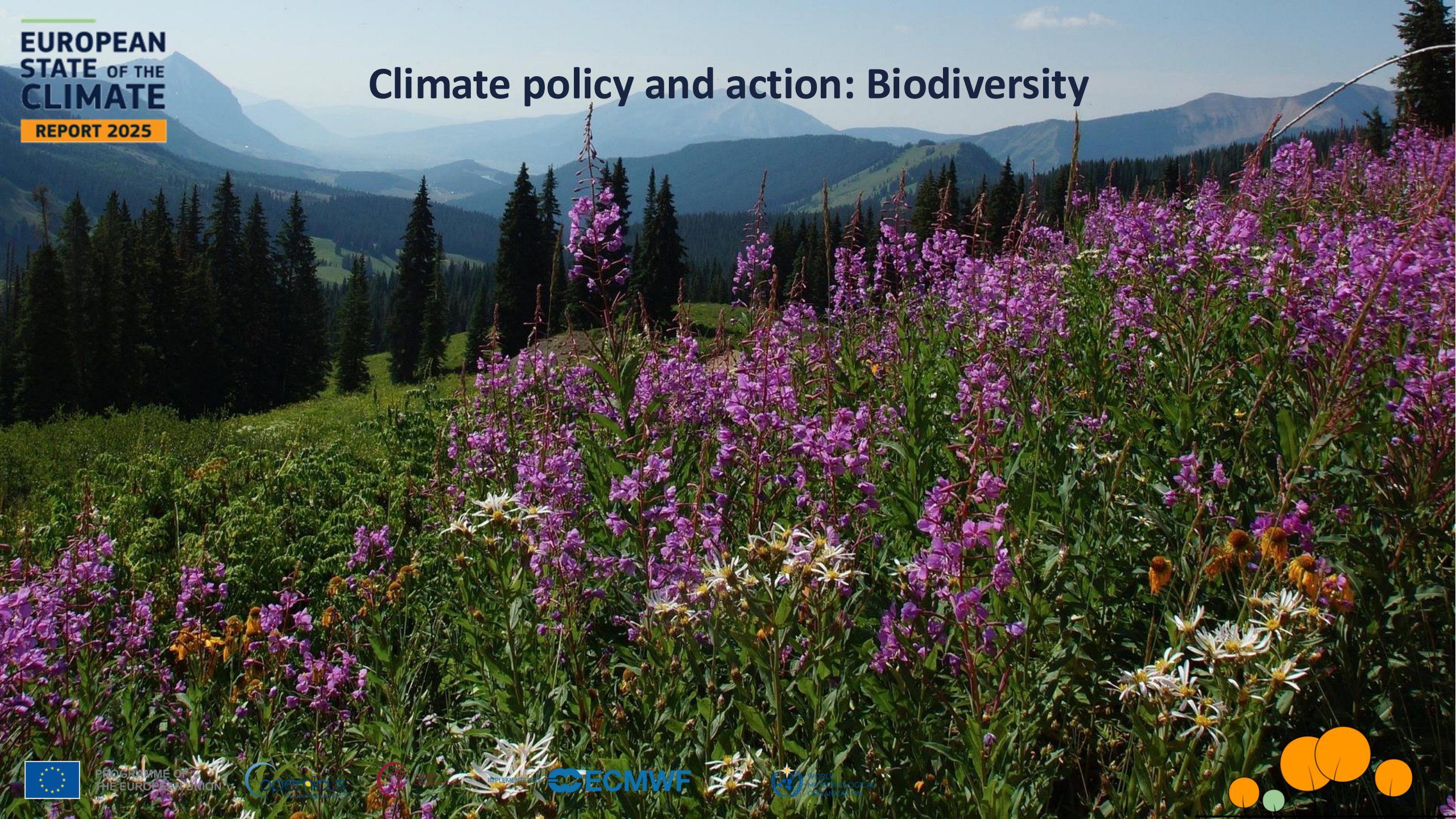
Total renewables indicates the contribution from solar, wind and hydro power combined.

Data: Ember • Credit: Rabobank/C3S/ECMWF





# Climate policy and action: Biodiversity



PROGRAMME OF  
THE EUROPEAN UNION



IMPLEMENTED BY

ECMWF





# Climate policy and action: Biodiversity

Biodiversity is **vital** for **life** on Earth. **Climate change** is a **major cause** of its **degradation**.

Diverse species and habitats support **clean air and water, fertile soils** and **pollination**, contributing to **food security, livelihoods** and **health**.

Climate change and biodiversity are **strongly connected** within **European policy and frameworks**.

By the end of 2025, around **half** of the **European Biodiversity Strategy 2030's** recommended actions were in place or completed.

## Examples of biodiversity initiatives across Europe



# Marine heatwaves impacting Mediterranean biodiversity

Marine heatwaves are linked to **mass mortality events**, shifts in species distributions and seasonal timing, and **ecosystem disruption**.

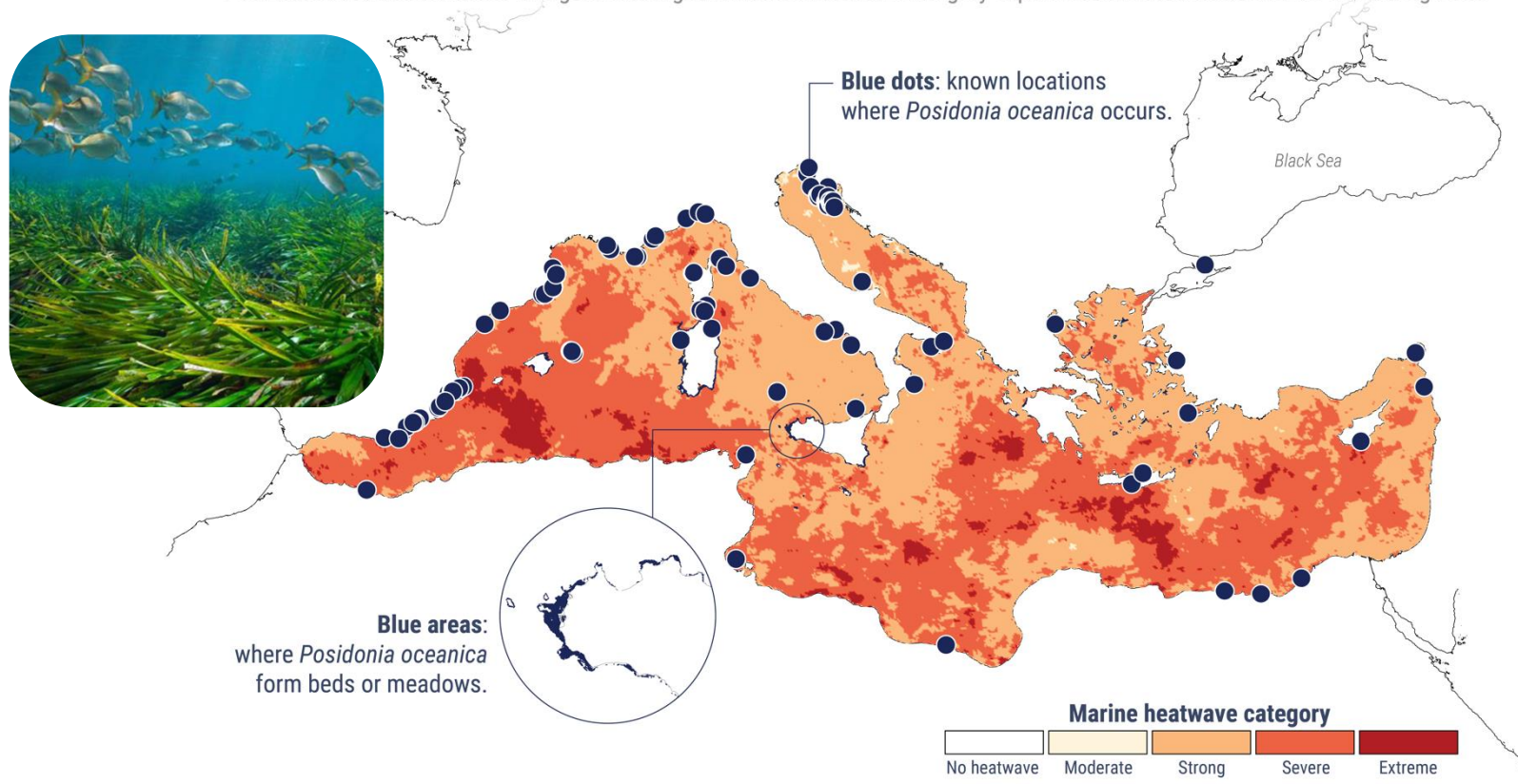
***Posidonia Oceanica*** is a Mediterranean seagrass that covers ~19,000 km<sup>2</sup> along Europe's coasts, providing **ecological + economical benefits**.

Over the past **50 years**, *P. oceanica* meadows have **declined by up to 34%**.

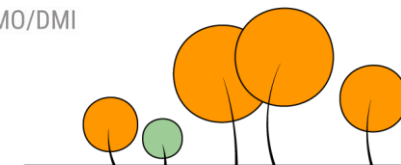
**Conservation** of meadows over the last decade has **benefited biodiversity** and **climate resilience**.

## Where can *Posidonia oceanica* meadows be found?

*Posidonia oceanica* locations alongside the highest marine heatwave category experienced in the Mediterranean Sea during 2025



Data: UNEP-WCMC, C3S Sea and Sea Ice Surface Temperature v1.0 • Credit: C3S/ECMWF/WMO/DMI





# Peatland wildfires impacting biodiversity

Peatlands are **essential ecosystems** providing unique **habitats** and **storing large amounts of carbon**.

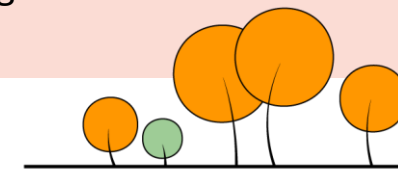


**Degradation and wildfires** can shift peatlands from **carbon sinks** to **major greenhouse gas sources**.

**Europe** has seen the **greatest proportional peatland loss** globally.

Fires can **spread rapidly** and **burn underground** for months. They cause **high mortality** among less mobile species and **alter vegetation**, reducing habitat suitability.

**Wildfire risk** in peatlands in **the Netherlands** is being mitigated through **nature-based solutions**.



---

**EUROPEAN  
STATE OF THE  
CLIMATE**

**REPORT 2025**